



# **DISAGGREGATION AND TARGETING OF UNIVERSAL SERVICE SUPPORT**

**Rural Task Force  
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The Rural Task Force is an independent advisory panel appointed by the Federal – State Joint Board on Universal Service to provide guidance on universal service issues affecting rural telephone companies. Opinions expressed in this White Paper are the collective view of the Rural Task Force membership and are not intended to represent the views of organizations to which each member is affiliated or those of the FCC or the Joint Board on Universal Service.

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# DISAGGREGATION AND TARGETING OF UNIVERSAL SERVICE SUPPORT FOR RURAL CARRIERS

## I. BACKGROUND

Previous white papers by the Rural Task Force (Task Force) have pointed out the need to disaggregate federal universal service support for rural telephone companies (Rural Carriers).<sup>1</sup> White Paper 5, “Competition and Universal Service,” discusses competition and universal service, and sets out the need for disaggregation in order to achieve competitive neutrality<sup>2</sup>. White Paper 6 is an analysis of the issues involved in disaggregating support and targeting that support to high-cost areas. In addition, this white paper considers the degree of disaggregation necessary for Rural Carriers, and reviews several alternatives.

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<sup>1</sup> “Rural telephone company” means a local exchange carrier operating entity to the extent that such entity-- (A) provides common carrier service to any local exchange carrier study area that does not include either-- (i) any incorporated place of 10,000 inhabitants or more, or any part thereof, based on the most recently available population statistics of the Bureau of the Census; or (ii) any territory, incorporated or unincorporated, included in an urbanized area, as defined by the Bureau of the Census as of August 10, 1993; (B) provides telephone exchange service, including exchange access, to fewer than 50,000 access lines; (C) provides telephone exchange service to any local exchange carrier study area with fewer than 100,000 access lines; or (D) has less than 15 percent of its access lines in communities of more than 50,000 on the date of enactment of the Telecommunications Act of 1996 (47 U.S.C. Section 153 (37)). The term “Rural Carrier” as used in this Recommendation is meant to include carriers serving insular areas and to incorporate the statutory definition of “rural telephone company” as applied in the FCC rules. See In re: Federal-State Joint Board on Universal Service, CC Docket No. 96-45, *Report and Order* (rel. May 8, 1997) at paragraph 96. See also FCC Public Notice, CC Docket No. 96-45, DA 98-1205 (rel. June 22, 1998) lists recognized self-certified “Rural Telephone Companies.” This list is updated periodically. See for example, FCC Public Notice, CC Docket No. 96-45, DA001705 (rel. Aug. 1, 2000).

<sup>2</sup> See Section IV.E. of White Paper 5, available at the Task Force Internet home page at [www.wutc.wa.gov/rtf](http://www.wutc.wa.gov/rtf). For any references to Task Force white papers hereinafter, please refer to the Task Force web page.

## II. EXISTING SUPPORT MECHANISMS

### A. Support for Non-Rural Carriers

The Federal Communication Commission's (FCC's) support mechanism for non-Rural Carriers calculates the need for federal universal service funds by comparing the average forward-looking costs in each state, as determined by the Synthesis Model, to a national cost benchmark. If the statewide average cost exceeds the benchmark, the FCC's mechanism funds a portion of the costs of companies within that state that exceed the benchmark.<sup>3</sup> Once the fund size for each company is calculated, the FCC then targets these funds to areas with higher than average costs. In its Order establishing the non-rural support mechanism the FCC found:

If we did not target support, then the same amount of federal support would be available for any line served by a competitor within the state. Thus, support would be available, for example, to competitors that serve only low-cost, urban lines, regardless of whether the cost of any of the lines served exceeds the benchmark. This result would create uneconomic incentives for competitive entry, and could result in support not being used for the purposes for which it was intended, in contravention of section 254(e).<sup>4</sup>

Disaggregation of support is an integral part of the support mechanism for the non-Rural Carriers. The Synthesis Model determines the forward-looking costs for each wire center for each non-Rural Carrier in the country. Support for each wire center is determined by comparing the costs of that wire center to a benchmark and then pro-rating the indicated support to fit the overall amount of support available for that company. The ultimate amount of federal per line support applicable to any non-Rural Carrier's wire

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<sup>3</sup> It also includes hold-harmless provisions for non-rural companies where the new fund would result in lower support than the previous universal service mechanism.

<sup>4</sup> See, In re: Federal-State Joint Board on Universal Service, CC Docket No. 96-45, *Ninth Report and Order and Eighteenth Order on Reconsideration* (rel. Nov. 2, 1999), at Para. 71.

center can be found on the FCC's web site.<sup>5</sup> Any eligible telecommunications carrier (ETC) that captures a customer in a high-cost exchange is eligible to receive the per line support indicated for that wire center.

## **B. Support for Rural Carriers**

The current support mechanism for Rural Carriers differs markedly from the non-rural mechanism. Federal loop support for Rural Carriers is determined by comparing embedded costs for Rural Carriers with a national cost benchmark. Companies with costs exceeding the benchmark receive support for a portion of those costs. However, support for Rural Carriers is not disaggregated. Instead, support for Rural Carriers is averaged across all lines served by the Rural Carrier within its study area. As a result, the cost to serve customers appears to be the same throughout the entire study area, and per line support available to offset those costs also appears to be the same. The FCC has previously recognized the shortcomings of not disaggregating support available for Rural Carriers. In approving a request by the Washington Utilities and Transportation Commission to use the Benchmark Cost Proxy Model (BCPM) as a guide for assigning support to density zones, the FCC stated:

Specifically, if service areas were designated as the exchanges, rather than the study areas, and universal service support were not geographically disaggregated, a competitor could receive a windfall by providing service in a relatively low cost exchange and receiving support based on the average cost within the study area. Petitioners' proposal to disaggregate support is designed to reduce such opportunities for cream skimming.<sup>6</sup>

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<sup>5</sup> See [www.fcc.gov](http://www.fcc.gov).

<sup>6</sup> In re: Petition for Agreement with Designation of Rural Company Eligible Telecommunications Carrier Service Areas and for Approval of the Use of Disaggregation of Study Areas for the Purpose of Distributing Portable Universal Service Support, CC Docket No. 96-45, DA 99-1844 (rel. Sept. 9, 1999) at paragraph 12.

Both competitive and incumbent carriers agree with the need to disaggregate and target universal support below the study area level. Incumbent carriers favor disaggregation in order to properly target support to high-cost areas and to avoid cream skimming of their most lucrative customers. Competitive carriers seek disaggregation in order to develop rational entry strategies and to facilitate portability of support. Disaggregation will also reduce the possibility for arbitrage of universal service support resulting in shortfalls or windfalls to either competitors or incumbent Rural Carriers. Aggregation, applied in this scenario, could vitiate equitable rural rates and impair network development. Thus, there is reasonable consensus that disaggregation of universal service support into smaller geographic areas furthers the goals of the 1996 Act by benefiting the highest cost rural customers and enabling competitive market entry. Indeed, disaggregating support targets that support to the most rural and high-cost zones within a given study area, enabling customers in those areas to receive services that are truly comparable to those provided in urban areas.

### **III. METHODS OF DISAGGREGATION**

Once the decision is made to disaggregate support, the proper level of disaggregation must be determined as well as acceptable methods of implementing that disaggregation. The chosen method for disaggregation should be relatively simple, inexpensive to administer, understandable by all parties and accurate in allocating support to high-cost areas.

A significant number of Rural Carriers have small towns as well as very sparsely distributed populations within their study area. Generally, the highest cost customers are a significant distance from the wire centers. Consequently, multiple ETCs competing to

serve rural customers require a cost efficient disaggregation method that accounts for cost differences. The following are possible methods of disaggregation:

1. Use of a proxy model;
2. Concentric circles drawn from the wire center;
3. Actual Costs;
4. Long-Run Incremental Cost Studies;
5. General density factors or other general cost indexes; or
6. Self-certification of high-cost zones.

All listed methods have advantages and disadvantages. The following is a brief discussion of each method.

## **1. Proxy Models**

Proxy models are complex, costly and hard to update and maintain. In its review of the non-rural federal universal service method, including the Synthesis Model, the Task Force has decided that the current Synthesis Model and inputs should not be used to size the fund for any Rural Carrier.<sup>7</sup> However, it may be possible that the Synthesis Model, or other forward-looking cost models could be used to determine the relative cost of serving Rural Carriers' wire centers. Since the Task Force concluded that using the Synthesis Model would not be appropriate for sizing the fund, using the Synthesis Model for disaggregation may not be appropriate in all cases. Additionally, the Synthesis Model cannot produce results for some Alaskan and insular areas due to problems in modeling

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<sup>7</sup> For an in-depth discussion, see White Paper 4, "A Review of the FCC's Non-Rural Universal Service Fund Method and the Synthesis Model for Rural Telephone Companies."

insular conditions and lack of geocoded customer location data. Hence, the model's use for disaggregation may not justify the cost of further model development for these areas.

## **2. Concentric Circles**

Using concentric circles drawn from a wire center to determine federal universal service support zones may represent cost characteristics as long as the wire center is located in the town or in a high-density area. However, this is not always the case. In addition, switches, nodes and other concentration technologies may be located in remote areas. A concentric circle approach, while administratively simple, must be accompanied by a method that accurately allocates support to each circle. Any method chosen may be essentially arbitrary. To date, no party has proposed an acceptable method to allocate support to these concentric circle cost zones.

## **3. Actual Costs**

The embedded costs of a company may be able to be accurately assigned to federal universal service support zones based on cost studies using the company's actual data. For example, the cost studies could replicate the methods that produced the support provided for study areas (i.e., High Cost Loop, Long-Term Support and Local Switching Support methods). Finally, even though disaggregation below the wire center level may be desirable in many cases, many Rural Carriers may not keep accounting records at this level of detail.

## **4. Long-Run Incremental Cost Studies**

The federal universal service support may be able to be assigned to cost zones based on an individual company's long-run incremental cost study. Actual long-run



incremental costs would couple accurate company-specific information for an incumbent company with the benefits of efficiencies sought by other interested parties. However, few Rural Carriers have conducted long-run incremental cost studies. Further, no rules or solid precedent exists at the federal level, or in most states, for a method to conduct these studies below the exchange level. In addition, the cost to prepare these studies could be economically infeasible.

## **5. Density or Other Cost Factors**

Some Task Force members and Task Force meeting attendees suggested that density factors, or other simplified cost indexes, could be used to disaggregate support. Where good geocoded customer data exists, density may provide an acceptable indication of relative cost. However, many rural areas lack accurate customer location information. Additionally, the factors that drive costs in many insular areas often do not include just density, but rather transport costs and/or the high operating costs of serving geographically remote, isolated areas. Also, a single cost factor may not be adequate for disaggregation. For instance, a cost index method used for a company that serves a moderately dense town of 3,000 customers and a sparse surrounding area with an additional 2,000 customers, may be inappropriate for a company that serves a very dense population of only 500 customers.

## **6. Self-Certification**

Rural Carriers could identify their own zones for the disaggregation of universal service support, and certify the support per zone to the regulatory authority. In order to minimize “gaming the system” the disaggregation method would remain fixed over a

period of years. A fully self-certified plan would not need any regulatory oversight. However, some regulatory oversight might be desirable. Because a system that allows individual companies to disaggregate their support would require the review of hundreds of unique, area-specific proposals, state commissions would be in the best position to review and act on these filings. Similarly, state commissions could take into account individual circumstances to assure that filed plans accurately reflect individual rural markets.

#### **IV. DEGREE OF DISAGGREGATION**

The appropriate level of cost disaggregation that would be appropriate under any of the methods discussed above is an issue for discussion. The support mechanism for non-Rural Carriers disaggregates support to the wire center level. Some parties have argued that disaggregation below the wire center level may be appropriate for Rural Carriers. If support is disaggregated below the wire center level, an argument can be made that a maximum of three zones per wire center –(i.e., high-cost, average-cost and low-cost) is all that may be needed. Yet, three zones may not be necessary or desirable in every circumstance. For instance, single exchange companies or insular companies may need only one or two zones. Even companies with multiple exchanges may have characteristics such that only an “urban” or high-density zone and a “rural” or low-density zone may be needed. Finally, some companies may determine that given the demographics and location of their service territory, and the lack of a realistic prospect of competition, disaggregation is simply not worth the cost.

Once the disaggregation zones are determined, the total universal service funds allocated to a Rural Carrier would be targeted to each zone. The support would then be

divided by the number of lines in those zones. Universal service support would vary on a per line basis by each zone to match the cost of that zone. Universal service funds would then be portable on that basis for customers captured by new ETCs.

## **V. OTHER ISSUES**

Some parties argue that disaggregation should only be required if a competitor has requested ETC status from the state commission. Competitors have argued that any disaggregation should be filed in advance so that ILECs cannot game the system, support is transparent, and competitors can adequately evaluate business opportunities in rural markets. Some argue that any disaggregation method and calculations should be filed with regulators and that a system of maps or databases must also be in place to allow competitors to know what universal service support is available for each specific area.

## **VI. SUMMARY**

We agree with interested parties concerning the need for many Rural Carriers to disaggregate federal universal service support. Recommendations on the appropriate degree of disaggregation, the methods used to achieve disaggregation and the need to create a system whereby competitors can easily calculate the support that is available to them are included in our final Recommendation submitted to the Federal State Joint Board on Universal Service in CC Docket No. 96-45 on September 29, 2000.